

CLAIMS

What is claimed is:

1. A system for controlling the operating functions of a cycle, which comprises at least one first unit and one second unit, which are able to co-operate functionally with one another, said first unit being selectively removable from the cycle, said second unit implementing a set of basic locomotion functions, wherein the second unit performs the set of basic locomotion functions when said first unit is removed from the cycle.

2. The system of claim 1 wherein said set of basic locomotion functions comprises the function of controlling, through corresponding controls associated to the second unit, a first actuator controlling a gear shift of the cycle and a second actuator controlling a derailleur of the cycle.

3. The system of claim 2 wherein said function of controlling the first actuator and second actuator is enabled in a manual mode that permits manual operation of the actuators.

4. The system of claim 2 wherein said function of controlling the first and second actuator is enabled in a automatic mode that permits automatic operation of the actuators.

5. The system of claim 1 wherein said second unit comprises a microcontroller that performs said set of basic locomotion functions.

6. The system of claim 1 wherein said first unit is removably connected to said second unit by means of at least one electrical connection, which can be disconnected by leaving exposed on said second unit at least one contact part, and in that associated to said at least one electrical connection is at least one switch, which

can be selectively actuated for electrical insulation of said exposed distal contact part from said second unit.

7. The system of claim 6 wherein said first unit comprises a magnet and in that said at least one switch is a switch that can be actuated magnetically by said magnet.

8. The system of claim 1 wherein said first unit is a display unit.

9. The system of claim 1 wherein said second unit comprises a control unit, associated to which are manually operated controls of the actuators and a power unit that drives said actuators.

10. A processing unit for controlling the operating functions of a cycle, designed for co-operating functionally with a further unit, said further unit being configured for being selectively removable from the cycle,

wherein said processing unit is configured for implementing a set of basic locomotion functions when said further unit is removed from the cycle.

11. A control unit for controlling the operating functions of a cycle, configured for being selectively removable from the cycle and for co-operating with at least one complementary unit associated to the cycle, comprising means for indicating its removal from the cycle to said complementary unit, enabling said complementary unit to implement a set of basic locomotion functions.

12. A method for controlling the operating functions of a cycle, which comprises the steps of:

providing a control system, which comprises at least one first unit and one second unit, which are able to co-operate functionally with one another;

configuring said first unit as a unit that is selectively removable from the cycle;
configuring said second unit for implementing a set of basic functions, ensuring performance thereof, in conditions of removal of said first unit from the cycle.

13. The method of claim 12 wherein said set of basic locomotion functions comprises the function of controlling an actuator corresponding to a gear shift of the cycle and an actuator corresponding to a derailleur of the cycle.

14. The method of claim 13 wherein it enables said function of controlling the actuator corresponding to a gear shift of the cycle and the actuator corresponding to a derailleur of the cycle in manual mode.

15. The method of claim 13 wherein it enables said function of controlling the actuator corresponding to a gear shift of the cycle and the actuator corresponding to a derailleur of the cycle in automatic mode.

16. The method of claim 12 wherein said set of basic functions are implemented by a microcontroller in said second unit.

17. The method of claim 12 wherein it foresees storing the requests of the first unit in said second unit and using the last instance of said requests of the first unit for ensuring performance of said basic locomotion functions.

18. A system for controlling the operating systems of a cycle comprising a display unit that allows a person to visually and manually interface with a control/power unit that controls at least one actuator that moves a part on a cycle, wherein the control/power unit is operable by the person through the display unit or in the absence or lack of functionality of the display unit, through the control/power unit.

19. The system of claim 18, wherein when the display unit is absent or not functional, the person operates the control/power unit using hand operable means.

20. The system of claim 19 wherein the hand operable means are buttons.

21. The system of claim 19 wherein the hand operable means are levers.

22. The system of claim 18, wherein when the display unit is absent or not functional, the person operates the control/power unit using a hand operable interface.

23. The system of claim 18 wherein the part of a cycle that moves is a derailleur.

24. The system of claim 18 wherein the part of a cycle that moves is a brake pad.

25. The system of claim 18 wherein the display unit directs the control/power unit to perform at least the following tasks:

- a) resetting the home position of the actuator;
- b) compensating for misalignments in the part;
- c) allowing the person to manually operate the actuator; and
- d) allowing the person to automatically operate the actuator.

26. The system of claim 18, wherein the control/power unit performs at least the following tasks the absence or lack of functionality of the display unit:

- a) allowing the person to manually operate the actuator; and
- b) allowing the person to automatically operate the actuator.

27. A cycle equipped with a system for controlling the operating functions of the cycle comprising at least one first unit and one second unit, which are able to co-operate functionally with one another, said first unit being selectively removable from the cycle, said second unit implementing a set of basic locomotion functions, wherein the second unit performs the set of basic locomotion functions when said first unit is removed from the cycle.

28. A computer program product directly loadable into the memory of a digital computer and comprising a means for implementing a set of advanced functions on a cycle and a means for implementing a set of basic functions on a cycle.

29. The computer program of claim 28, wherein the software is unable to implement advanced functions in the absence of a display unit.

30. A system for controlling the operating functions of a cycle, the system comprising:

at least one display unit that provides information regarding the functional operation of a cycle in human readable form; and

at least one control unit, which is functionally connected with and exchanges operational information with the at least one display unit regarding the cycle's locomotion functions and is capable of continuing to perform a set of basic locomotion functions if the connection with and exchange of operational information with the at least one display unit is interrupted.